

IN THE CLAIMS

1. (Currently Amended) An isolated polynucleotide molecule ~~encoding a human vitamin D receptor (VDR) isoform, said polynucleotide molecule comprising:~~

i) a nucleotide sequence ~~having 95% or more sequence identity to a nucleotide sequence encoding exon 1d of the human vitamin D receptor (VDR) gene, or a complement thereof.~~

2. (Currently Amended) A polynucleotide molecule according to claim 1, wherein said nucleotide sequence further ~~includes~~ comprises:

i) a nucleotide sequence ~~having 95% or more sequence identity to a nucleotide sequence encoding an amino acid sequence of exon 1b, or a complement thereof;~~

ii) a nucleotide sequence ~~having 95% or more sequence identity to a nucleotide sequence encoding an amino acid sequence of exon 1c, or a complement thereof;~~ or

iii) a nucleotide sequence ~~having comprising~~ i) and ii).

3. (Currently Amended) A polynucleotide molecule according to claim 1, wherein the nucleotide sequence includes, from 5' to 3':

(i) a sequence ~~having 95% or more sequence identity to a nucleotide sequence encoding an amino acid sequence of exons 1d, 1c and 2-9 so as to encode a VDR isoform of approximately 477 amino acids, or a complement thereof;~~

(ii) a sequence ~~having 95% or more sequence identity to a nucleotide sequence encoding an amino acid sequence of exons 1d and 2-9 so as to encode a VDR isoform of approximately 450 amino acids, or a complement thereof;~~ or

(iii) a sequence ~~having 95% or more sequence identity to a nucleotide sequence encoding an amino acid sequence of exons 1d and 2-9 and further includes a 152bp intronic sequence so as to encode a truncated VDR isoform of approximately 72 amino acids, or a complement thereof.~~

4. (Currently Amended) A polynucleotide molecule according to claim 1, wherein the polynucleotide comprises a nucleotide sequence ~~having 95% or more sequence identity to a nucleotide sequence or encoding an amino acid sequence encoded by SEQ ID NO:2, SEQ ID NO:3 or SEQ ID NO:4, or a complementary sequence thereof.~~

5. – 8. (Canceled)

9. (Currently Amended) A plasmid or expression vector ~~including~~ comprising a polynucleotide molecule according to claim 1.

10. (Original) A host cell transformed with a polynucleotide molecule according to claim 1 or a plasmid or expression vector according to claim 9.

11. (Original) A host cell according to claim 10, wherein the cell is a mammalian cell.

12. (Original) A host cell according to claim 10, wherein the cell is a NIH 3T3 or COS 7 cell.

13. (Currently Amended) A method of producing a VDR or VDR isoform polypeptide comprising culturing a host cell of claim 10 under conditions enabling the expression of the polynucleotide molecule to produce the VDR or VDR isoform polypeptide and, optionally, recovering the VDR or VDR isoform polypeptide.

14. (Previously Presented) A method according to claim 13, wherein the VDR or VDR isoform polypeptide is expressed onto the host cell membrane or other sub-cellular compartment.

15. – 18. (Canceled)

19. (Currently Amended) An oligonucleotide or polynucleotide probe comprising a nucleotide sequence of 10 or more consecutive nucleotides of the nucleotide sequence of any one of claims 21-24 or 28, ~~the probe comprising a nucleotide sequence such that the probe specifically hybridises to a polynucleotide molecule according to any one of claims 1-8 under high stringency conditions~~.

20. (Currently Amended) An antisense polynucleotide molecule comprising the a nucleotide sequence of any one of claims 21-24 or 28, ~~capable of specifically hybridising to a mRNA molecule~~

~~which encodes a VDR or VDR isoform encoded by a polynucleotide molecule according to any one of claims 1-8, so as to prevent translation of the mRNA molecule.~~

21. **(Currently Amended)** An isolated polynucleotide molecule comprising a nucleotide sequence having greater than 75% sequence identity to a polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement thereof.

22. **(Currently Amended)** An isolated polynucleotide molecule comprising a nucleotide sequence having greater than 85% sequence identity to a polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement thereof.

23. **(Currently Amended)** An isolated polynucleotide molecule comprising a nucleotide sequence having greater than 95% sequence identity to a polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement thereof.

24. **(Currently Amended)** An isolated polynucleotide molecule comprising a nucleotide sequence of

5'GTTCCCTCTTCGCGGGCGCTGGCATGGAGTGGAGGAATAAGAAAAGGAG
CGATTGGCTGTCGATGGTGCTCAGAACTGCTGGAGTGGAGG3' (SEQ ID NO:1), or a complement thereof.

25. – 26. **(Canceled)**

27. **(Currently Amended)** An isolated polynucleotide molecule comprising a nucleotide sequence of nucleotide residues 30-95 of SEQ ID NO:1, or a complement thereof.

28. **(Currently Amended)** An isolated polynucleotide molecule encoding a human vitamin D receptor (hVDR) isoform, said polynucleotide molecule comprising a nucleotide sequence encoding the amino acid sequence MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement thereof.

29. (Canceled)

30. (Currently Amended) A plasmid or expression vector including a polynucleotide molecule according to claim 21, 22, 23, 24, 27 or 28.

31. (Currently Amended) A recombinant host cell containing a polynucleotide molecule according to claim 21, 22, 23, 24, 27 or 28.

32. (Currently Amended) A recombinant host cell containing a plasmid or expression vector according to claim 31 30.

33. (Previously Presented) A host cell according to claim 32, wherein the cell is a mammalian cell.

34. (Previously Presented) A host cell according to claim 32, wherein the cell is a NIH 3T3 or COS 7 cell.

35. (Currently Amended) A method of producing a VDR or VDR isoform polypeptide-comprising

culturing a host cell of claim 32 comprising a plasmid or expression vector comprising a polynucleotide molecule encoding a human vitamin D receptor (VDR) or VDR isoform, said polynucleotide comprising the nucleotide sequence of a polynucleotide according to claim 21, 22, 23, 24, or 28, said culturing being under conditions enabling the expression of the VDR or VDR isoform polynucleotide molecule and,

optionally, recovering the VDR or VDR isoform polypeptide.

36. (Previously Presented) A method according to claim 35, wherein the VDR or VDR isoform polypeptide is expressed onto the host cell membrane or other sub-cellular compartment.

37. (New) A polynucleotide molecule according to claim 21, wherein said nucleotide sequence further comprises:

- i) a nucleotide sequence encoding an amino acid sequence of exon 1b of the human vitamin D receptor (VDR) isoform, or a complement thereof;
- ii) a nucleotide sequence encoding an amino acid sequence of exon 1c of the human VDR isoform, or a complement thereof; or
- iii) a nucleotide sequence comprising i) and ii).

38. (New) A polynucleotide molecule according to claim 21, wherein the nucleotide sequence comprises, from 5' to 3':

- (i) a sequence encoding an amino acid sequence of exons 1d, 1c and 2-9 of the human vitamin D receptor (VDR) isoform so as to encode a VDR isoform of approximately 477 amino acids, or a complement thereof,
- (ii) a sequence encoding an amino acid sequence of exons 1d and 2-9 or the human VDR isoform so as to encode a VDR isoform of approximately 450 amino acids, or a complement thereof, or
- (iii) a sequence encoding an amino acid sequence of exons 1d and 2-9 of the human VDR isoform and further includes a 152bp intronic sequence so as to encode a truncated VDR isoform of approximately 72 amino acids, or a complement thereof.

39. (New) A polynucleotide molecule according to claim 22, 23, or 24, wherein said nucleotide sequence further comprises:

- i) a nucleotide sequence encoding an amino acid sequence of exon 1b of the human vitamin D receptor (VDR) isoform, or a complement thereof;
- ii) a nucleotide sequence encoding an amino acid sequence of exon 1c of the human VDR isoform, or a complement thereof; or
- iii) a nucleotide sequence comprising i) and ii).

40. (New) A polynucleotide molecule according to claim 22, 23, or 24, wherein the nucleotide sequence comprises, from 5' to 3':

- (i) a sequence encoding an amino acid sequence of exons 1d, 1c and 2-9 of the human vitamin D receptor (VDR) isoform so as to encode a VDR isoform of approximately 477 amino acids, or a complement thereof,
- (ii) a sequence encoding an amino acid sequence of exons 1d and 2-9 or the human VDR isoform so as to encode a VDR isoform of approximately 450 amino acids, or a complement thereof, or
- (iii) a sequence encoding an amino acid sequence of exons 1d and 2-9 of the human VDR isoform and further includes a 152bp intronic sequence so as to encode a truncated VDR isoform of approximately 72 amino acids, or a complement thereof.